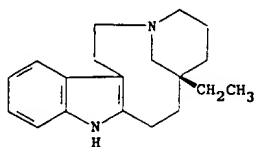


Ziegler *et al.*, *ibid.* **91**, 2342 (1969); Kutney *et al.*, *ibid.* **92**, 1727 (1970); V. S. Giri *et al.*, *J. Heterocycl. Chem.* **17**, 1133 (1980); S. Takano *et al.*, *Heterocycles* **16**, 247 (1981). Enantioselective synthesis: *idem*, *Chem. Commun.* **1980**, 616; **1981**, 1153.

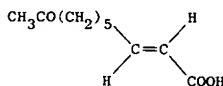


Bitter leaflets, mp 145-147°.  $[\alpha]_D^{20}$  -109 to -110° (acetone). uv max (methanol): 230, 287, 293 nm (log  $\epsilon$  4.55, 3.85, 3.84). Sol in acetone, alc, chloroform, ether, dil acids.

**8041. Quebracho Colorado.** Red quebracho. Wood of *Loxopterygium lorentzii* Griseb., *Anacardiaceae*. Habit. Argentine Republic. Constit. Tannin, coloring matter, loxopterygine.

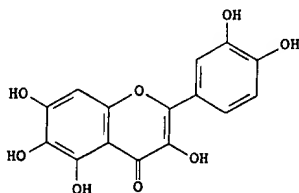
USE: In dyeing and tanning.

**8042. Queen Substance.** (*E*)-9-Oxo-2-decenoic acid.  $C_{10}H_{16}O_3$ ; mol wt 184.23. C 65.19%, H 8.75%, O 26.05%. Secreted in the mandibular gland of queen honey bees (*Apis mellifera*, *A. florea*, *A. cerana*, *A. dorsata*); inhibits the development of ovaries in worker bees, prevents queen cell formation and attracts male bees (drones) to virgin queens for the purpose of mating: Butler, *Experientia* **13**, 256 (1957); Sannasi, Rajulu, *Life Sci.* **10**, part 2, 195 (1971). Similarity with the ovary inhibiting hormone of prawns (*Leander serratus*): Carlisle, Butler, *Nature* **177**, 276 (1956). Extraction and purification: Carlisle, Butler, *loc. cit.*; Butler *et al.*, *Nature* **184**, 1871 (1959). Synthesis: Barbier *et al.*, *Compt. Rend.* **251**, 1133 (1960); Jaeger, Robinson, *Tetrahedron* **14**, 320 (1961); B. M. Trost, T. N. Salzman, *J. Org. Chem.* **40**, 148 (1975); J. Tsuji *et al.*, *Tetrahedron Letters* **1977**, 2267; C. S. Subramaniam *et al.*, *Ind. J. Chem.* **16B**, 318 (1978); T. Fujisawa *et al.*, *Chem. Letters* **1982**, 219; Y. Naoshima *et al.*, *Agr. Biol. Chem.* **48**, 2151 (1984).



Transparent elongated plates from ether + petr ether or aq methanol, mp 54.5-55.5°. Stable to heat, acids, less stable to alkalis. Sol in acetone, alcohol. IR spectrum: Butler *et al.*, *loc. cit.*

**8043. Quercetagenin.** 2-(3,4-Dihydroxyphenyl)-3,5,6,7-tetrahydroxy-4H-1-benzopyran-4-one; 3,3',4',5,6,7-hexahydroxyflavone; 6-hydroxycyanidenol 1555.  $C_{15}H_{10}O_8$ ; mol wt 318.23. C 56.61%, H 3.17%, O 40.22%. From flowers of French marigold, *Tagetes patula* Linn., *Compositae*: Perkin, *J. Chem. Soc.* **103**, 209 (1913). Synthesis: Baker *et al.*, *ibid.* **1929**, 74; Rao, Seshadri, *Proc. Indian Acad. Sci.* **23A**, 23 (1946), C.A. **40**, 5052<sup>2</sup> (1946).



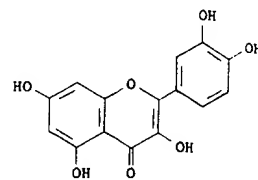
Dihydrate, pale yellow needles from dil alcohol, mp 318°. uv max (alc): 259, 361 nm (log  $\epsilon$  4.23, 4.34). Sol in hot alcohol; sparingly sol in boiling water.

Hexaacetate,  $C_{27}H_{22}O_{14}$ , needles from alcohol + acetic acid, mp 209-211°. Sparingly sol in alc.

7-Glucoside,  $C_{21}H_{20}O_{13}$ , quercetagenitrin. From flowers of the African marigold, *Tagetes erecta* L., *Compositae*: Rao,

Seshadri, *Proc. Indian Acad. Sci.* **14A**, 289 (1941), C.A. **3**, 2555<sup>3</sup> (1942); from *Chrysanthemum coronarium* L., *Compositae*: Anyas, Steelink, *Arch. Biochem. Biophys.* **90**, 61 (1962). Structure: Rajagopalan, Seshadri, *Proc. Indian Acad. Sci.* **28A**, 31 (1948), C.A. **43**, 4265b (1949). Crystals from aqueous pyridine, dec 236-238°. uv max (95% ethanol) 272, 362 nm.

**8044. Quercetin.** 2-(3,4-Dihydroxyphenyl)-3,5,7-trihydroxy-4H-1-benzopyran-4-one; 3,3',4',5,7-pentahydroxyflavone; meletin; sophoretin; cyanidenol 1522.  $C_{15}H_{10}O_7$ ; mol wt 302.23. C 59.61%, H 3.34%, O 37.06%. The aglycone of quercitrin, of rutin, and of other glycosides. Widely distributed in the plant kingdom, esp in rinds and bark of clover blossoms and in ragweed pollen. Isolated from *Dendron cinnabarinum* Hook, *Ericaceae*: Rangaswami, *Proc. Indian Acad. Sci.* **56A**, 239 (1962), C.A. **58**, 424 (1963). Structure: Underhill *et al.*, *Can. J. Biochem. Physiol.* **35**, 219 (1957). Biosynthesis: Watkin *et al.*, *ibid.* **22**, 229 (1962); Patschke *et al.*, *Z. Naturforsch.* **21b**, 201 (1966). Synthesis: Shakhova *et al.*, *Zh. Obshch. Khim.* **32**, 390 (1962), C.A. **58**, 1426f (1963). Metabolism: Nakagawa *et al.*, *Biochim. Biophys. Acta* **97**, 1 (1965). Toxicity data: M. Sullivan *et al.*, *Proc. Soc. Exp. Biol. Med.* **77**, 269 (1951). See also Bioflavonoids.



Dihydrate, yellow needles from dil alcohol. Becomes anhydrous at 95-97°. When anhydrous dec 314°. uv max (alc): 258, 375 nm (log  $\epsilon$  2.75, 2.75). One gram dissolves in 200 ml abs alc, in 23 ml boiling alc. Soluble in glacial acetic acid; aq alkaline solns with yellow color. Practically insol in water. Alcoholic solns taste very bitter. LD<sub>50</sub> orally in mice: 160 mg/kg (Sullivan).

Pentabenzyl ether,  $C_{50}H_{40}O_7$ , 3,3',4',5,7-pentabenzylbenzoylflavone, penta-O-benzylquercetin, Parietope. Prep. Chopin, Chadenson, *Compt. Rend. Ser. C* **263**, 729 (1966). Binovic, Ger. pat. **2,122,514** (1972 to Biosedra), C.A. **76**, 113072n (1972). Crystals, mp 123-125°. uv max (chloroform): 249, 343 nm (log  $\epsilon$  4.43, 4.14).

3-D-Galactoside hemipentahydrate,  $C_{21}H_{20}O_{12} \cdot 2\frac{1}{2}H_2O$ , hyperin, hyperoside. From *Acacia melanoxylon* R. Br., *Leguminosae*: Falco, de Vries, *Naturwiss.* **51**, 462 (1964). Yellow needles from ethanol, dec 227-230°.  $[\alpha]_D^{20}$  -83° (c 0.5 in pyridine). uv max: 259, 364 nm (log  $\epsilon$  4.31, 4.39).

THERAP CAT: Capillary protectant.

**8045. Quercimeritrin.** 2-(3,4-Dihydroxyphenyl)-7-O-glucopyranosyloxy-3,5-dihydroxy-4H-1-benzopyran-4-one; quercetin-7-O-glucoside; 3,3',4',5,7-pentahydroxyflavone-7-O-glucoside.  $C_{21}H_{20}O_{12}$ ; mol wt 464.37. C 54.31%, H 4.34%, O 41.34%. Found in flowers of *Gossypium herbaceum* L., *Malvaceae*: Perkin, *J. Chem. Soc.* **95**, 2181 (1909); from leaves of *Chrysanthemum segetum* L. and *C. coronarium* L., *Compositae*: Geissman, Steelink, *J. Org. Chem.* **22**, 142 (1957); Anyas, Steelink, *Arch. Biochem. Biophys.* **90**, 61 (1960). Structure: Attree, Perkin, *J. Chem. Soc.* **1927**, 222; Rao, Seshadri, *Proc. Indian Acad. Sci.* **9A**, 365 (1939), C.A. **34**, 1071 (1940); Pacheco, Grouiller, *Compt. Rend.* **253**, 117 (1961).

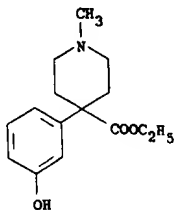
Trihydrate, yellow plates from aq pyridine. The water of crystallization is given up at 100°, the anhydrous material is hygroscopic, mp 247-249°. uv max (ethanol): 372, 257 nm (log  $\epsilon$  4.38, 4.38). Practically insol in cold water, more sol in hot water; sol in methanol. Sol in aq alkaline solns with deep yellow color. Is hydrolyzed by 7%  $H_2SO_4$  yielding 1 mol quercetin and 1 mol D-glucose.

In the mother liquor from quercimeritrin the glucosides gossypitrin and isoquercitrin q.v. are also found. Gossypitrin,  $C_{21}H_{20}O_{13}$ , orange-yellow needles melting at 200-205°, slightly sol in alcohol and acetic acid.

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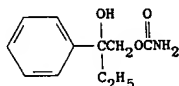
B

$\text{C}_{21}\text{H}_{21}\text{NO}_3$ ; mol wt 263.33. C 68.41%, H 8.04%, N 2.35%. Prepn: Morrison, Rinderknecht, J. Chem. Soc., 1467; Eisleb, Ger. pat. 752,755 (1952 to I. G. Farben), 52, 7361e (1958).

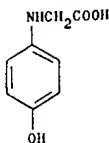


crystals from ethanol, mp 110°. hydrochloride,  $C_{15}H_{21}NO_3 \cdot HCl$ , crystals, mp 173-174°. Soluble in water; slightly sol in alc. **Caution:** May be habit forming. This is a controlled substance (opiate) listed in the U.S. Code of Federal Regulations, Title 21, Part 1308.11 (1985). **IFRAP CAT:** Narcotic analgesic.

**770. Hydroxyphenamate.** *2-Phenyl-1,2-butenediol carbamate*; carbanic acid  $\beta$ -ethyl- $\beta$ -hydroxyphenethyl ester;  $\beta$ -ethyl- $\beta$ -hydroxyphenethyl carbanic acid ester;  $\beta$ -ethyl- $\beta$ -hydroxyphenethyl carbamate; 2-hydroxy-2-phenylbutanedioyl carbamate; 2-hydroxy-2-phenylbutanedioyl carbamate; Al 0361; Listica. C<sub>11</sub>H<sub>15</sub>NO<sub>3</sub> mol wt 229.24. C 63.14%, H 7.23%, N 6.69%, O 22.94%. A  $\beta$ -ethyl- $\beta$ -hydroxyphenethyl alcohol and ethyl carbamate followed by reaction with ammonia: Siffert, *Bull. Soc. Chim. France*, 1961, 182. U.S. pat. 3,066,164 (1962 to Armour-Pharm.). Pharmacology and toxicology: Bastian, Clements, *Dis Nerv. Syst.* 9 (1961).



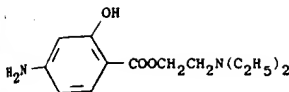
Crystals, mp 55-56.5°. Soly in water at 25°: 2.5%  
50 orally in mice: 830 mg/kg.  
HERAP CAT: Anxiolytic.

[illegible]

shiny leaflets from water, browns at 220°, begins to melt at 220°, completely melted at 245-247° (decolor). Soluble in water, alcohol, acetone, ether, chloroform, carbon disulfide, nitrobenzene, nitroethane, nitrotoluene, nitrobenzene, benzene, glacial acetic acid. Soluble in alkalies and acids. Freely sol in warm 20% hydrochloric acid.

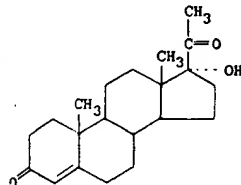
USE: Photographic developer. In determination of phosphorus and phosphorus indicator in bacteriology.

**4772. Hydroxyprocaine.** Diethylaminoethyl  
ylate; Oxycaïne; Oxyprocarin.  $C_{13}H_{20}N_2O_3$ , mol wt.  
61.88% H, 7.99%, N 11.10%, O 19.02%. Prep by  
ion of diethylaminoethanol to an  $H_2SO_4$  suspension  
of diethylamine hydrochloride. *J. Pharm. Med.* 1954,  
sil, Rademacher, *Arzneimittel-Forsch.* 1, 154, 218  
Grimme et al., *ibid.* 326; cf. Swiss pat. 270,566  
*Chem. Zentr.* 1951, II, 102.



liquid. Soluble in chloroform.  
 Chloride,  $C_{13}H_{20}N_2O_3 \cdot HCl$ , prisms from ethanol, mp 112-113°.  
 Soluble in water.  
 Sulfate salt,  $C_{13}H_{20}N_2O_3 \cdot C_{16}H_{18}N_2O_4S$ , dec 112-113°.  
 Sol in water (7.5 g/l).  
 Local anesthetic.

**17 $\alpha$ -Hydroxyprogesterone.** 17-Hydroxypregn-4-  
-dione; 4-pregnen-17 $\alpha$ -ol-3,20-dione; Gestageno;  
 $C_{21}H_{34}O_3$ ; mol wt 330.45. C 76.32%, H 9.15%, O  
5.53%. Isolated from adrenal glands: Pfaffner, North, *J. Biol.*  
132, 459 (1940); 139, 855 (1941); von Euw, Reich-  
Hof, *Chem. Acta* 24, 879 (1941). Prepn: Julian et al.,  
124, 662 (1953) to Glidden; Ringold et al.; Stork  
U.S. pats. 2,802,839 and 2,805,203 (both 1957 to Syn-  
Chemeda et al.); Cutler, Chemseda; Dulaney, McAleer;  
pats. 2,777,843; 2,786,856/7; 2,813,060 (all 1957 to  
& Co.); Cutler et al., *J. Org. Chem.* 24, 1629 (1959);  
U.S. pat. 3,000,883 (1961 to Upjohn).

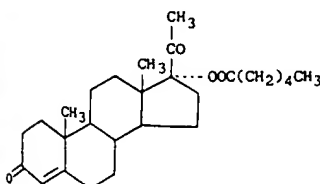


Dimeric or hexagonal leaflets from acetone or alcohol, mp 222.3° (rapid heating). With slow heating the substance undergoes molecular rearrangement accompanied by desulfidification and becomes completely molten only at 271. [α]<sub>D</sub><sup>20</sup> +105.6° (c = 1.0417 in chloroform). Molecular formula, C<sub>27</sub>H<sub>42</sub>O<sub>2</sub>, 17α-acetoxypregesterone. Crystals from acetone + methanol, mp 239–240°, uv max: 240 nm (ε 433). Ref: Stork et al., loc. cit.

ANAL. CAT: Pregestrol.

**NEW CAT (VET):** Estrus regulator.

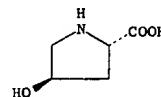
17 $\alpha$ -Hydroxyprogesterone Caproate. 17-(1-methylpregn-4-ene-3,20-dione; 17-hydroxypregn-4-ene-3,20-dione hexanoate; 17 $\alpha$ -hydroxyprogesterone hexanoate; Hypoval P.A.; Lentogest; Pharlone; Progestin Depot; Teraltul.  $C_{27}H_{46}O_3$ ; mol wt 428.59. C, 84.94%; O, 14.93%. Prepn: Kaspar *et al.*, U.S. Pat. 3,060,100 (1956) to Schering AG). Comprehensive description: K. Florey, Ed. in *Analytical Profiles of Drug Substances* (Academic Press, New York, 1975) pp 209-224.



needles from isopropyl ether or methanol, mp 119-120°C (c = 1 in chloroform). Soly (mg/ml): 25-29; levulinic acid butyl ester 350-400. CAT: Progestogen.

**4-Hydroxy-L-proline.** Hyp; L<sub>5</sub>-hydroxyproline; 4-hydroxyproline; 4-hydroxy-2-pyrrolidinecarboxylic acid;  $\text{C}_5\text{H}_9\text{NO}_3$ ; mol wt 131.13. C 45.79%, H 6.92%, N 10.36%, O 36.60%. An amino acid classified as nonessential except to its growth effect in rats. Constituent of collagen from gelatin hydrolyzates: E. Fischer, *Ber. Buns. Ges. Phys. Chem.* 90, 293 (1912); Klabunde, *J. Biol. Chem.* 90, 293 (1931).

Synthesis: Leuchs, *Ber.* **38**, 1937 (1905); R. Gaudry, C. Godin, *J. Am. Chem. Soc.* **76**, 139 (1954); C. Eguchi, A. Kakuta, *Bull. Chem. Soc. Japan* **47**, 1704 (1974); S. G. Ramaswamy, E. Adams, *J. Org. Chem.* **42**, 3440 (1977). Flow sheets of four different syntheses: *Chem. & Eng. News* **40**, 40 (Nov. 12, 1962). Structure based on crystallographic data: Zussman, *Acta Cryst.* **4**, 72 (1951); Donohue, Trueblood, *ibid.* **5**, 414 (1952). Stereochemistry: Hudson, Neuberger, *J. Org. Chem.* **15**, 24 (1950). In plant glycoproteins: D. Ashford, A. Neuberger, *Trends in Biochem. Sci.* **5**, 245 (1980). Isolin of *cis*-form from *Santalum album* L.: A. N. Radhakrishnan, K. V. Giri, *Biochem. J.* **58**, 57 (1954). Detection of *cis*- and *trans* isomers in collagen hydrolysates: G. Bellon et al., *Anal. Biochem.* **137**, 151 (1984). Review of metabolism: E. Adams, L. Frank, *Ann. Rev. Biochem.* **49**, 1005-1061 (1980).



Rhombs or needles from water, mp 274°.  $[\alpha]_D^{25} - 76.5^\circ$  ( $c = 2.5$  in water).  $pK_1' 1.82$ ;  $pK_2' 9.65$ . Soly in water at 0°: 288.6 g/l; at 25°: 361.1 g/l; at 50°: 451.8 g/l; at 65°: 516.7 g/l. Very slightly sol in alcohol; insol in ether.  
*cis*-Form, *alohydroxyproline*. mp 238-241°.  $[\alpha]_D^{25} - 58.1^\circ$  ( $c = 5.2$  in water).

**4776. Hydroxypropyl Cellulose.** *Cellulose 2-hydroxypropyl ether*; oxypropylated cellulose; Klucel; Lacrisert. Non-ionic water soluble ether of cellulose, *q.v.* that produces solutions having a wide range of viscosity (200-2500 cp). Prepn: *Neth. pat. Appl. 6,401,036*; E. D. Klug, U.S. pats. **3,278,520**, **3,278,521** (1964, 1966, 1966 all to Hercules). Use in the treatment of dry eye syndrome: T. P. Werblin *et al.*, *Ophthalmology* **88**, 78 (1981); P. Huguet *et al.*, *Bull. Soc. Ophthalmol. Fr.* **81**, 1173 (1981). Review of chemistry, physical properties and uses: E. D. Klug in *Encyclopedia of Polymer Science and Technology* vol. 15 (Interscience, New York, 1971) pp 307-314; A. J. Desmarais, *Industrial Gums*, R. L. Whistler, Ed. (Academic Press, New York, 2nd ed., 1973) pp 649-672.

Off-white powder, softens at 130°. Sol in many polar organic solvents. Ppts from water at 40-45°. Thermoplastic.

USE: As emulsifier, stabilizer, whipping aid, protective colloid, film former or thickener in foods; as binder in ceramics and glazes; in hair and cosmetic preps; in vacuum-formed containers and blow-molded bottles; as suspending agent in PVC polymerization. Pharmaceutical aid (tablet coating agent).

**THERAP CAT:** Protectant (topical)

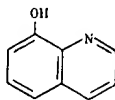
**4777. Hydroxypropyl Methylcellulose.** *Cellulose 2-hydroxypropyl methyl ether*; hypromellose; Gonak; Goniosol; Lacril; Tearisol; Methocel HG; Ultra Tears. Non-ionic water soluble ether of methylcellulose, *q.v.* that produces solns having a wide range of viscosity (400-15,000 cp). Prepn: A. B. Savage, U.S. pat. 2,949,252 (1960 to Dow). Review of chemistry, physical properties and use: *idem*, *Encyclopedia of Polymer Science and Technology* vol. 3 (Interscience, New York, 1965); pp 496-511; G. K. Greminger, A. B. Savage, *Industrial Gums*, R. L. Whistler, Ed. (Academic Press, New York, 1973) pp 619-647.

**Powder.** Dissolves slowly in cold water. Insol in hot water. Sol in most polar organics. Has thermogelling properties. Has higher salt tolerance and is more sol than methylcellulose.

**USE:** As emulsifier, film former, protective colloid, stabilizer, suspending agent, or thickener in foods. Pharmaceutic aid (suspending agent; tablet excipient; demulcent; viscosity-increasing agent); ophthalmic lubricant. In adhesives, asphalt emulsions, caulking compounds, tile mortars, plastic mixes, cements, paints. As sticker for agricultural sprays and dusts.

**4778. 8-Hydroxyquinoline.** *8-Quinolinol*; oxyquinoline; hydroxybenzopyridine; oxybenzopyridine; phenopyridine; oxychinolin; oxine; Bioquin; Quinophenol.  $C_8H_7NO$ ; mol wt 145.15. C 74.47%, H 4.86%, N 9.65%, O 11.02%. Prep'n

from *o*-aminophenol, glycerol and  $\text{H}_2\text{SO}_4$ : Z. H. Skraup, *Monatsh.* **1**, 316 (1880); **3**, 536 (1882); R. H. F. Manske et al., *Can. J. Res.* **27F**, 359 (1949). Review: J. P. Phillips, *Chem. Rev.* **56**, 271-297 (1956). Book: R. G. W. Hollingshead, *Oxine and Its Derivatives*, I-IV (Butterworth, London, 1954/56).



White crystals or cryst powder. mp  $76^\circ$ . bp  $\sim 267^\circ$ . Almost insol in water, ether; freely sol in alc, acetone, chloroform, benzene, aq mineral acids. LD<sub>50</sub> i.p. in mice: 48 mg/kg, Bernstein et al., *Toxicol. Appl. Pharmacol.* **5**, 599 (1963).

USE: As fungistat; chelating agent in determ of trace metal ions.

THERAP CAT: Disinfectant.

**4779. 8-Hydroxyquinoline Sulfate.** *8-Quinololin sulfate*; oxyquinoline sulfate; oxine sulfate; 8-hydroxyquinoline sulfuric acid salt; Quinosol; Chinosol.  $\text{C}_{10}\text{H}_7\text{NO}_3\text{S}$ ; mol wt 388.40. C 55.66%, H 4.15%, N 7.21%, O 24.72%, S 8.25%. ( $\text{C}_9\text{H}_7\text{NO}$ )<sub>2</sub>· $\text{H}_2\text{SO}_4$ .

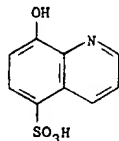
Pale yellow, cryst powder; slight saffron odor; burning taste. mp  $175-178^\circ$ . Freely sol in water; sol in about 100 parts glycerol, slightly in alcohol; insol in ether.

Aluminum salt,  $\text{C}_{27}\text{H}_{24}\text{AlN}_3\text{O}_{15}\text{S}_3$ , *Nyxolan*, *Aloxyn*.

USE: Antiseptic, antiperspirant, deodorant.

THERAP CAT: Topical antiseptic, disinfectant.

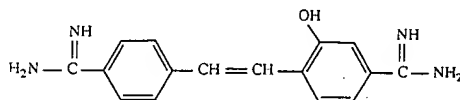
**4780. 8-Hydroxy-5-quinolinesulfonic Acid.**  $\text{C}_9\text{H}_7\text{NO}_3\text{S}$ ; mol wt 225.22. C 47.99%, H 3.13%, N 6.22%, O 28.42%, S 14.24%. Prepn: K. Matsumura, *J. Am. Chem. Soc.* **49**, 810 (1927); N. K. Chawla, M. M. Jones, *Inorg. Chem.* **3**, 1549 (1964).



Pale yellow, needle-like crystals or cryst powder; odorless. mp  $322-324^\circ$ . Freely sol in water, slightly in organic solvents.

USE: In determ of trace metal ions.

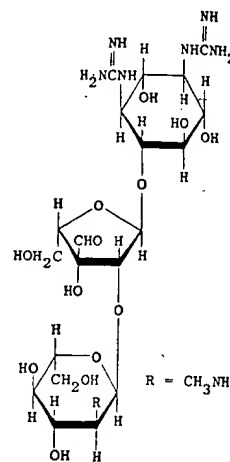
**4781. Hydroxystilbamidine.** *4-[2-[4-(Aminoimino-methyl)phenyl]ethenyl]-3-hydroxybenzenecarboximidamide*; 2-hydroxy-4,4'-stilbenedicarboximidamide; 2-hydroxy-4,4'-diamidinostilbene; 2-hydroxy-4,4'-diguanylstilbene; 2-hydroxystilbamidine.  $\text{C}_{16}\text{H}_{16}\text{N}_4\text{O}$ ; mol wt 280.33. C 68.55%, H 5.75%, N 19.99%, O 5.71%. Prepn: J. N. Ashley, J. O. Harris, *J. Chem. Soc.* **1946**, 567; A. J. Ewins et al., *Brit. pat.* **574,486**; A. J. Ewins, U.S. pat. **2,510,047** (1946, 1950 both to May & Baker). Organ and tissue distribution in animals: I. Snapper et al., *Cancer* **4**, 1246 (1951). Pharmacology and antiprotozoal activity: I. Snapper et al., *Trans. N.Y. Acad. Sci.* **14**, 269 (1952). Probe for studying nucleic acid conformation: B. Festy, *C.R. Acad. Sci. Ser. D* **266**, 1433 (1968); B. Festy, M. Daune, *Biochemistry* **12**, 4827 (1973); B. Festy et al., *Biochim. Biophys. Acta* **407**, 24 (1975). Crystal structure: C. Courseille et al., *C.R. Acad. Sci. Ser. C* **274**, 1921 (1972). Use as a fluorochrome for selective staining of nuclei: L. B. Murgatroyd, *Histochemistry* **74**, 107 (1982). Review: B. Festy in *Antibiotics* vol. 5, pt. 2, F. E. Hahn, Ed. (Springer-Verlag, New York, 1979) pp 223-235.



Yellow microcrystals from nitrobenzene, mp  $235^\circ$  in mice (mg/g): 0.027 i.v.; 0.14 s.c. (Ewins, 1950). Isethionate,  $\text{C}_{20}\text{H}_{28}\text{N}_4\text{O}_9\text{S}_2$ , yellow crystals, discolored by light, mp  $286^\circ$  (dec). Freely sol in water. Sol in alc, soln 3.3 to 5.3. Solns show strong yellow fluorescence under uv light. Solns should be freshly prepared. Although the hydroxy compd is more stable in soln, such solns should be stored and must not be used if cloudy.

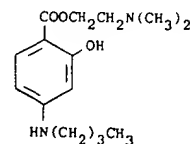
THERAP CAT: Antiprotozoal (Leishmania).

**4782. Hydroxystreptomycin.** Reticulin (the antibiotic  $\text{C}_{21}\text{H}_{39}\text{N}_7\text{O}_{13}$ ; mol wt 597.60. C 42.21%, H 6.53%, N 16.41%, O 34.81%). Antibiotic substance produced by *Streptomyces reticuli*: Hosoya et al., *Japan. J. Exp. Med.* **20**, 22 (1949), *C.A.* **45**, 3459i (1951); by *S. griseocarnes* (from Japanese soil): Stodola et al., *J. Am. Chem. Soc.* **73**, 226 (1951); Benedict, Stodola, U.S. pat. **2,617,755** (1952 to U.S. Secy. Agr.); by *Streptomyces* NA 232-M1: Grundy et al., *Antibiot. & Chemother.* **1**, 309 (1951); by *S. subtritus*: et al., *J. Antibiot.* **17A**, 23 (1964). Identity of reticulin as antibiotic and hydroxystreptomycin: Hosoya et al., *Japan. J. Exp. Med.* **22**, 303 (1952), *C.A.* **48**, 3477a (1954). From Ambrose, *Proc. Soc. Exp. Biol. Med.* **76**, 466 (1951).



Trihydrochloride,  $\text{C}_{21}\text{H}_{42}\text{Cl}_3\text{N}_7\text{O}_{13}$ . The physical characteristics approx those of streptomycin. The specific rotation in water is  $91^\circ$  under conditions which give 86.1% streptomycin trihydrochloride. Hydroxystreptomycin trihydrochloride, when assayed against *Bacillus subtilis*, was found to be equiv to 784  $\mu\text{g}$  of streptomycin base/mg. The corresponding value of streptomycin is 842  $\mu\text{g}$ /mg. LD<sub>50</sub> in mice: 865 mg/kg (Ambrose).

**4783. Hydroxytetracaine.** *4-Butylamino-2-hydroxy-3-oxo-2-phenylacetic acid 2-dimethylaminoethyl ester*; *p*-butylaminobenzoic acid 2-dimethylaminoethyl ester; 2-dimethylaminoethyl *p*-butylaminosalicylate; hydroxamethocaine; Rheinol; Salicain.  $\text{C}_{15}\text{H}_{24}\text{N}_2\text{O}_3$ ; mol wt 280.36. C 64.26%, H 8.61%, N 9.99%, O 17.12%. Prepn: *Brit. pats.* **736,960** (1955), **760,003** (1956 to Rheinpreussen AG); Grimme, *Schweiz. Pat.* **84**, 734 (1951).



Hydrochloride,  $\text{C}_{15}\text{H}_{24}\text{N}_2\text{O}_3\text{HCl}$ , crystals from water, mp  $157^\circ$ . Soly in water at  $20^\circ$ : about 4%. Hemihydrate, prisms from ligroin, mp  $48^\circ$ . THERAP CAT: Topical anesthetic.